BENJAMIN S. PETRILLO

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Availability: July 2024 – December 2024

Motivated and proactive Computer Science student with a strong dedication to lifelong learning and enhancing technical skills. Thrives in both solo and collaborative settings; enthusiastic and self-driven. Delivers professional results in diverse environments.

EDUCATION

Northeastern University | Khoury College of Computer Sciences | Boston, MA Sept 2022 – Present
Candidate for a Bachelor of Science in Computer Science | Concentration: Software Expected May 2026

Honors:	**GPA:** 3.61/4.00	**Major GPA:** 3.80	Dean's List
Relevant Coursework:	Algorithms & Data Structures, Networks & Distributed Systems, Object-Oriented Design, Computer Systems, Logic & Computation, Programming in C++, Mathematics of Data Models

TECHNICAL KNOWLEDGE

Languages:	Java	TypeScript/JS	Python	C++	SQL	HTML/CSS	**Familiar:** C	PHP	Common Lisp
Frameworks:	Node.js	Express.js	React	Tailwind	Bootstrap	Flask	Cheerio	NumPy	EJS	REST APIs
Technologies:	MySQL	MongoDB	Git	GPT-4	GPG	JUnit	Postman	Jetbrains IDEs & VSCode	Linux
Other Skills:	Data Structures & Algorithms	Object-Oriented Design	Educational Leadership	Full-Stack Dev.

WORK EXPERIENCE

Northeastern University | Boston, MA
Teaching Assistant for Object-Oriented Design May 2024 – Present
- Led & instructed two weekly labs of over 60 students each, teaching object-oriented design patterns.
- Held 6 weekly office hours assisting students with assignments, and graded 20+ assignments weekly.

Teaching Assistant for Fundamentals of Computer Science II Dec 2023 – May 2024
- Taught a weekly lab of over 40 students, providing tutoring and enforcing concepts taught in lectures.
- Graded exams, lab activities, and 30+ assignments per week. Conducted office hours 3 days per week, mentoring students.

PROJECTS

Ponjo API | TypeScript, HTML, CSS, JavaScript, Express.js | [GitHub Repository](#) Jun 2022 – Present
- Created an advanced REST API with numerous endpoints to allow developers to integrate numerous features into their applications, such as image manipulation, a JSON-based poker game simulator, and a URL shortener.
- Designed a bearer authorization system for access to certain endpoints and stored encrypted user data in MongoDB collections.

Elixir Music Discord Bot & API | Java, TypeScript, MongoDB | [GitHub Repository](#) May 2021 – Present
- Engineered a Discord application, with both TypeScript and Java variants, for over 275,000 users using the Spotify & YouTube APIs to stream audio tracks to voice channels. Built a REST API to convert Spotify URLs to YouTube URLs via ISRC, implemented custom playlists, and integrated per-user settings using MongoDB for encrypted data storage. Provided full documentation using Vuepress and Markdown.
- Implemented a public API and wrapper to easily allow developers to interact with the application from their own codebase.

Ponjo Pastes | TypeScript, HTML, CSS, JavaScript, EJS | [GitHub Repository](#) Apr 2021 – July 2021
- Constructed a web application using Express.js and MongoDB to store code snippets with automatic syntax highlighting.
- Utilized HTML & EJS to dynamically render pastes by their ID onto a webpage and created a REST API to parse this data.

Helios Network | PHP, MySQL, YAML, PocketMine-MP | [GitHub Repository](#) May 2020 – Jun 2022
- Designed a full multi-server network core for a Minecraft: Bedrock Edition player-versus-player server network in object-oriented PHP. Created a distributed system to handle load across servers in various regions.
- Spearheaded development of a custom anti-cheat system for the network. Used 3D vectors and movement simulations to flag suspicious player movement and reach distance using yaw and pitch, and prevented the use of autoclicking software by analyzing player latency and clicking patterns.
- Utilized MySQL and YAML to store player data, led development of a full administration & punishment system, and used web sockets to overlay anti-cheat logs and punishment logs to the Discord chat platform. Also developed a Discord application to send remote commands to the server on behalf of an administrator. Development later continued under a new name, Valiant.